

B1
Amended

8. (Amended) The electric motor according to claim 7, wherein the housing further has a spring tab with one of the detent and a snap projection at a free end.

Please add new claim 16 as follows

B2

16. (New) An electric motor comprising:

a housing having an inaccessible bearing seat;

an armature shaft; and

an armature-shaft bearing situated in the bearing seat of the housing,

the armature-shaft bearing being retained axially in the bearing seat by one of a detent and a snap-fit connection.

REMARKS

INTRODUCTION

Claims 7-16 are currently pending, with claim 16 having been added hereby. Support for new claim 16, can be found at least on page 2, lines 19-21 of the specification. Claims 7 and 8 have been amended. No new matter has been added.

RESPONSE TO OBJECTION TO THE DRAWINGS

The drawings have been objected to under 37 C.F.R. 1.83(a) for not showing every feature of the invention specified in the claims. In particular, the Office Action asserts that the following features are not shown in the drawings:

- a) "snap-fit connection" of claim 7, line 6;
- b) "a spring tab" of claim 8, lines 1-2; and
- c) "a tamping" of claim 12, line 5.

It is respectfully submitted that the drawings depict these features. Figure 1 shows a detent element 34 that has a detent projection 36. As described in the originally-filed specification on page 6, lines 23-35, armature-bearing 26 is pressed into bearing seat 32 "until detent element 34 snaps into place." The dashed lines depicting the elastic movement of the detent element 34 show how the detent

element distends to allow the armature-bearing 26 to be pressed into the bearing seat 32, and the depiction of the detent projection 36 underneath the armature bearing clearly indicates how the snap-fit connection works: when the bearing is fully pressed in, the detent element is no longer distended outwards, and snaps back to hold the armature-bearing 26 in place via the detent projection 36. It is therefore submitted that Figure 1 adequately depicts both a detent and a snap-fit connection as recited in claim 7.

Similarly, the spring tab of claim 8 is also depicted. As stated on page 6, lines 7-8 of the originally-filed specification, "[d]etent element 34 has a spring tab, likewise designated 34, which laps paraxially over armature-shaft bearing 26 at the periphery." Again, a portion of the detent element 34 that distends elastically (indicated by the dashed lines) is shown as the spring tab of Figure 1.

The "tamping" of claim 12 is shown in Figure 2. The originally-filed specification states that "[a]n inwardly projecting collar can be produced on the bearing seat by tamping, the collar retaining the armature-shaft bearing in the bearing seat by form closure." Specification, page 3, lines 10-12. Figure 2 shows a collar 44 formed on the periphery of the bearing seat using, for example, a pressure roller 46, which is an illustrated example of "a tamping" which is broadly defined in the Webster's Dictionary as filling in an area (a protrusion) using pressure. Figure 3 similarly shows an inwardly projecting protrusion, or tamping, caused by pressure, which tamping acts to constrain movement of the armature-shaft bearing.

Accordingly, it is respectfully submitted that each of the features listed above are adequately depicted in Figures 1 and 2.

RESPONSE TO THE REJECTION OF CLAIM 8 UNDER 35 U.S.C. §112, ¶2

Claim 8 has been rejected under 35 U.S.C. §112, paragraph 2, as being indefinite because there is insufficient basis for "a detent" recited in line 2 of the claim.

Claim 8 depends from independent claim 7, which recites that the armature-shaft bearing is retained axially in the bearing seat by one of *a detent* and a snap-fit connection. Claim 8, as amended, recites that the housing further has a spring tab with one of *the detent* and a snap projection at a free end. Thus, the detent recited

in claim 8 refers to "a detent" recited in claim 7. It is submitted that claim 8 is now definite.

RESPONSE TO THE REJECTION OF CLAIMS 7-8 UNDER 35 U.S.C. §102(b)

Claims 7 and 8 have been rejected under 35 U.S.C. §102(b) as being anticipated by German Published Patent Application No. 4422492 to Rainer et al. (Rainer).

Independent claim 7, as amended, recites an armature-shaft bearing situated in the bearing seat of the housing, the armature-shaft bearing being retained axially in the bearing seat by one of a detent and a snap-fit connection and by a portion of the bearing seat. Rainer does not disclose this feature. In Figure 2 of Rainer, no portion of the bearing seat 33 axially retains the armature-shaft. In contrast, as shown, for example, in Figure 1 of the present application, the portion of armature-shaft toward the worm 30 is axially bounded and retained by a portion of bearing 32 (shown as a flange in the figure).

Accordingly, it is respectfully submitted that Rainer does not anticipate all of the features of claim 7, or claim 8, which depends from and further limits claim 7.

Withdrawal of the rejection of claims 7 and 8 under 35 U.S.C. §102(b) is therefore respectfully requested.

RESPONSE TO THE REJECTION OF CLAIMS 12-13 UNDER 35 U.S.C. §102(b)

Claims 12 and 13 have been rejected under 35 U.S.C. §102(b) as being anticipated by United States Patent No. 5,129,740 to Matsushita et al. (Matsushita).

Independent claim 12 recites an armature-shaft bearing situated in the bearing seat of the housing, the armature-shaft bearing being fixed in position in the bearing seat by a tamping. The Office Action asserts that Matsushita discloses this feature in the pressed groove shown in Figure 3 of Matsushita as numeral seven (7). While Matsushita appears to depict a groove on the external side of a bearing element, it does not show a tamping, that is, an inwardly projecting protrusion caused by application of pressure, that fixes the armature-bearing axially in position in the bearing seat: "The bearing . . . has a pressed groove formed as a pressing mark on the outer circumferential surface of the bearing support." Matsushita, col. 2,

lines 64-68 (emphasis added).

While Matsushita uses a pressed groove to reduce a radial clearance between a shaft bearing and an armature, the tamping recited in claim 12 goes further to fix the axial position of the armature, due to the fact that the armature bearing cannot move past the tappings.

Accordingly, it is respectfully submitted that Matsushita does not anticipate claim 12, or claim 13, which depends from and further limits claim 12.

Withdrawal of the rejection of claims 12 and 13 under 35 U.S.C. §102(b) is therefore respectfully requested.

RESPONSE TO THE REJECTION OF CLAIMS 9-11 UNDER 35 U.S.C. §103(a)

Claims 9-11 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Rainer in view of United States Patent No. 5,485,044 to Mackay et al. (Mackay).

Claims 9-11 depend from independent claim 7. It is respectfully submitted that Mackay does not cure the deficiencies of the Rainer reference noted above with respect to claim 7, since Mackay also fails to disclose or suggest an armature-shaft bearing being retained axially in the bearing seat by one of a detent and a snap-fit connection and by a portion of the bearing seat. As shown in Mackay Figure 2, the armature bearing 70 is not retained axially by a portion of the bearing seat; instead, there is a space directly above the bearing 70 permitting movement of the bearing toward the gear end.

Accordingly, the combination of Rainer and Mackay does not teach or suggest each of the elements of claim 9-11. Withdrawal of the rejection of these claims under 35 U.S.C. §103(a) is therefore respectfully requested.

RESPONSE TO THE REJECTION OF CLAIMS 14-15 UNDER 35 U.S.C. §103(a)

Claims 14 and 15 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Matsushita in view of Mackay.

Claims 14 and 15 depend from and incorporate the features of independent claim 12. It is respectfully submitted that Mackay does not cure the deficiencies of Matsushita noted above with respect to claim 12, since Mackay also fails to disclose

or suggest an armature-shaft bearing situated in the bearing seat of the housing which is fixed in position in the bearing seat by a tamping. In fact, Mackay does not refer to or even suggest any type of pressure-formed structures in relation to an armature bearing element.

Since the combination of Matsushita and Mackay does not teach or suggest each of the elements of claims 14 and 15, these claims are patentable over the cited references. Withdrawal of the rejection of these claims under 35 U.S.C. §103(a) is therefore respectfully requested.

CONCLUSION

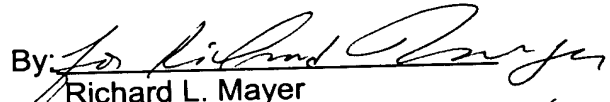
It is respectfully submitted that the foregoing amendments and remarks demonstrate that the application is in clear condition for allowance and prompt notification thereof is solicited. The Examiner is invited to contact the undersigned to discuss any matter concerning this application.

The Office is authorized to charge any fees associated with this Amendment to Kenyon & Kenyon Deposit Account No. 11-0600.

Respectfully Submitted,

KENYON & KENYON

Dated: May 7, 2002

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Version with Markings to show changes made

IN THE CLAIMS:

Please amend the following claims:

7. (Amended) An electric motor comprising:
- a housing having a bearing seat;
 - an armature shaft; and
 - an armature-shaft bearing situated in the bearing seat of the housing, the armature-shaft bearing being retained axially in the bearing seat by one of a detent and a snap-fit connection and by a portion of the bearing seat;
8. (Amended) The electric motor according to claim 7, wherein the housing further has a spring tab with one of [a] the detent and a snap projection at a free end.

Please add new claim 16 as follows:

16. (New) An electric motor comprising:
- a housing having an inaccessible bearing seat;
 - an armature shaft; and
 - an armature-shaft bearing situated in the bearing seat of the housing, the armature-shaft bearing being retained axially in the bearing seat by one of a detent and a snap-fit connection.